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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,032	06/13/2005	Ken-ichi Inui	4439-4034	8848
27123	7590	09/27/2007		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER LI, RUIXIANG	
			ART UNIT 1646	PAPER NUMBER
			NOTIFICATION DATE 09/27/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOPatentCommunications@Morganfinnegan.com  
Shopkins@Morganfinnegan.com  
Tquinones@Morganfinnegan.com

<b>Office Action Summary</b>	Application No. 10/539,032	Applicant(s) INUI ET AL.	
	Examiner Ruixiang Li	Art Unit 1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                      | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input checked="" type="checkbox"/> Other: <u>Sequence alignment</u>                |

***Election/Restrictions***

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

- I. Claims 1-3, 6, 10-13, 18, 20 (in part), drawn to a DNA which comprises a base sequence shown by SEQ ID NO: 1 or a sequence containing part of the sequence, a host cell, and a method for producing a polypeptide.
- II. Claims 4, and 5, drawn to a polypeptide which comprises SEQ ID NO: 2 or a variant thereof.
- III. Claims 7-9, 20 (in part), drawn to an antibody.
- IV. Claim 14, drawn to a method for screening a substance having a glucose and/or fructose transporter function-regulation activity.
- V. Claims 15 and 16, drawn to a non-human animal model which develops renal diabetes caused by a defect in renal glucose reabsorption.
- VI. Claim 17, drawn to a method for screening a preventive/therapeutic drug for renal diabetes caused by a defect in glucose reabsorption.
- VII. Claim 19, claim 19, drawn to a microarray or a DNA chip for diagnosing glucose and/or fructose transporter function.

- VIII. Claims 21 and 22, drawn to a method for diagnosing glucose and/or fructose transporter function by measuring its gene expression using a probe.
- IX. Claims 23 and 24, drawn to a method for diagnosing glucose and/or fructose transporter function by measuring the polypeptide using an antibody.
- X. Claim 25, drawn to a method for diagnosing glucose and/or fructose transporter function by measuring the transporter function in a renal disease.
- XI. Claims 26-29, drawn to a method for regulating glucose and/or fructose transporter function in an animal tissue cell.
2. The inventions listed as Groups I-XI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:
- The technical feature linking Groups I-XI appears to be a DNA which comprises a base sequence shown by SEQ ID NO: 1 or a sequence containing part of the sequence. However, claim 1 is anticipated by Database EST, Accession No. BZ096172 (October 10, 2002), which teaches a nucleic acid sequence comprising nucleotides 1371 to 2173 (except position 1625) of SEQ ID NO: 1 of the present invention (see attached sequence alignment). Therefore, the technical feature linking the inventions of Groups I-XI does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art.
3. The special technical features of Groups I-III are, a DNA which comprises a base sequence shown by SEQ ID NO: 1 or a sequence containing part of the sequence,

a host cell, and a method for producing a polypeptide, a polypeptide which comprises SEQ ID NO: 2 or a variant thereof, and an antibody, respectively.

The special technical features of Groups IV-VI are a method for screening a substance having a glucose and/or fructose transporter function-regulation activity, a non-human animal model which develops renal diabetes caused by a defect in renal glucose reabsorption, and a method for screening a preventive/therapeutic drug for renal diabetes caused by a defect in glucose reabsorption, respectively.

The special technical feature of Group VII is a microarray or a DNA chip for diagnosing glucose and/or fructose transporter function.

The special technical features of Groups VIII-X are a method for diagnosing glucose and/or fructose transporter function by measuring its gene expression using a probe, a method for diagnosing glucose and/or fructose transporter function by measuring the polypeptide using an antibody, and a method for diagnosing glucose and/or fructose transporter function by measuring the transporter function in a renal disease, respectively.

The special technical feature of Group XI is a method for regulating glucose and/or fructose transporter function in an animal tissue cell.

4. Accordingly, Groups I-XI are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept. Thus, unity of invention is lacking and restriction is appropriate.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48 (b) if

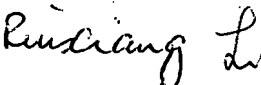
Art Unit: 1646

one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48 (b) and by the fee required under 37 CFR 1.17 (l).

***Advisory Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruixiang Li whose telephone number is (571) 272-0875. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol, can be reached on (571) 272-0835. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, please contact the Electronic Business Center (EBC) at the toll-free phone number 866-217-9197.

  
Ruixiang Li, Ph.D.  
Primary Examiner  
September 22, 2007

RUIXIANG LI, PH.D.  
PRIMARY EXAMINER

EST

BZ096172  
 LOCUS BZ096172 825 bp DNA linear GSS 10-OCT-2002  
 DEFINITION CH230-141P7.TJB CHORI-230 Segment 1 Rattus norvegicus genomic clone  
 CH230-141P7, genomic survey sequence.  
 ACCESSION BZ096172  
 VERSION BZ096172.1 GI:23737056  
 KEYWORDS GSS.  
 SOURCE Rattus norvegicus (Norway rat)  
 ORGANISM Rattus norvegicus  
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia;  
 Sciurognathi; Muroidea; Muridae; Murinae; Rattus.  
 REFERENCE 1 (bases 1 to 825)  
 AUTHORS Zhao, S., Shetty, J., Shatsman, S., Tsegaye, G., Geer, K.,  
 Shvartsbeyn, A., Gebregeorgis, E., Overton, L., Russell, D., Chen, D.,  
 Riggs, F., de Jong, P. and Fraser, C.M.  
 TITLE Rat BAC End Sequences from Library CHORI-230 EcoRI segment  
 JOURNAL Unpublished (1999)  
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 Clones are derived from the rat BAC library CHORI-230  
 (<http://www.chori.org/bacpac/rat230.htm>). For BAC library  
 availability, please contact Pieter de Jong ([pdejong@mail.choi.org](mailto:pdejong@mail.choi.org)).  
 Clones may be purchased from BACPAC Resources  
 ([http://www.chori.org/bacpac/orering\\_information.htm](http://www.chori.org/bacpac/orering_information.htm)). BAC end  
 page: [http://www.tigr.org/tdb/bac\\_ends/rat/bac\\_end\\_intro.html](http://www.tigr.org/tdb/bac_ends/rat/bac_end_intro.html)  
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 Seq primer: SP6  
 Class: BAC ends.  
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 /note="Vector: pTARBAC2.1; Site\_1: EcoRI; Site\_2: EcoRI;  
 CHORI-230 Rat (BN/SsNHsd/MCW) BAC library produced by  
 Pieter de Jong"  
 ORIGIN  
 Query Match 36.8%; Score 799.8; DB 16; Length 825;  
 Best Local Similarity 99.8%; Pred. No. 1.9e-223;  
 Matches 801; Conservative 0; Mismatches 2; Indels 0; Gaps 0;  
 Qy 1371 CTTCAGGGACACTATCCCAGTCTGCCAGTAATTCTGTACATGTGTCTGGGCTCAGCAGTA 1430  
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 Db 1 CTTCAGGGACACTATCCCAGTCTGCCAGTAATTCTGTACATGTGTCTGGGCTCAGCAGTA 60  
 Qy 1431 TTAACAACGTGTGTTATTCCTGTGATGTATAAAGTAGCCACCTTACCTCTGGATCGAAAG 1490  
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 Db 61 TTAACAACGTGTGTTATTCCTGTGATGTATAAAGTAGCCACCTTACCTCTGGATCGAAAG 120  
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